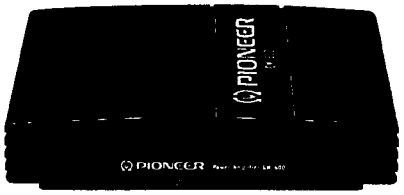
PIONEER
The Art of Entertainment

Service Manual

● GM-600/UC



ORDER NO.
CRT1322

POWER AMPLIFIER

GM-600 UC, EW

GM-620 ES

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SPECIFICATIONS

Power source	14.4 V DC (10.8 - 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	6.5 A
Dimensions	140 (W) × 32 (H) × 100 (D) mm [5-1/2 (W) × 1-1/4 (H) × 4 (D) in.]
Weight	0.5 kg (1.1 lbs.) (Leads for wiring not included)
Maximum power output	35 W × 2
Continuous power output	18 W × 2 (at 4Ω, 20–20,000 Hz, 0.5% THD)
Load impedance	4Ω (2–8Ω allowable)
Frequency response	10–50,000 Hz (+0 dB, –1 dB)
Signal-to-noise ratio	94 dB (IHF-A network)
Distortion	0.015% (at 10W, 1kHz)
Input level	0.2–2 V/7kΩ

This specification were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

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SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. CONNECTING THE UNITS (UC, ES MODEL)

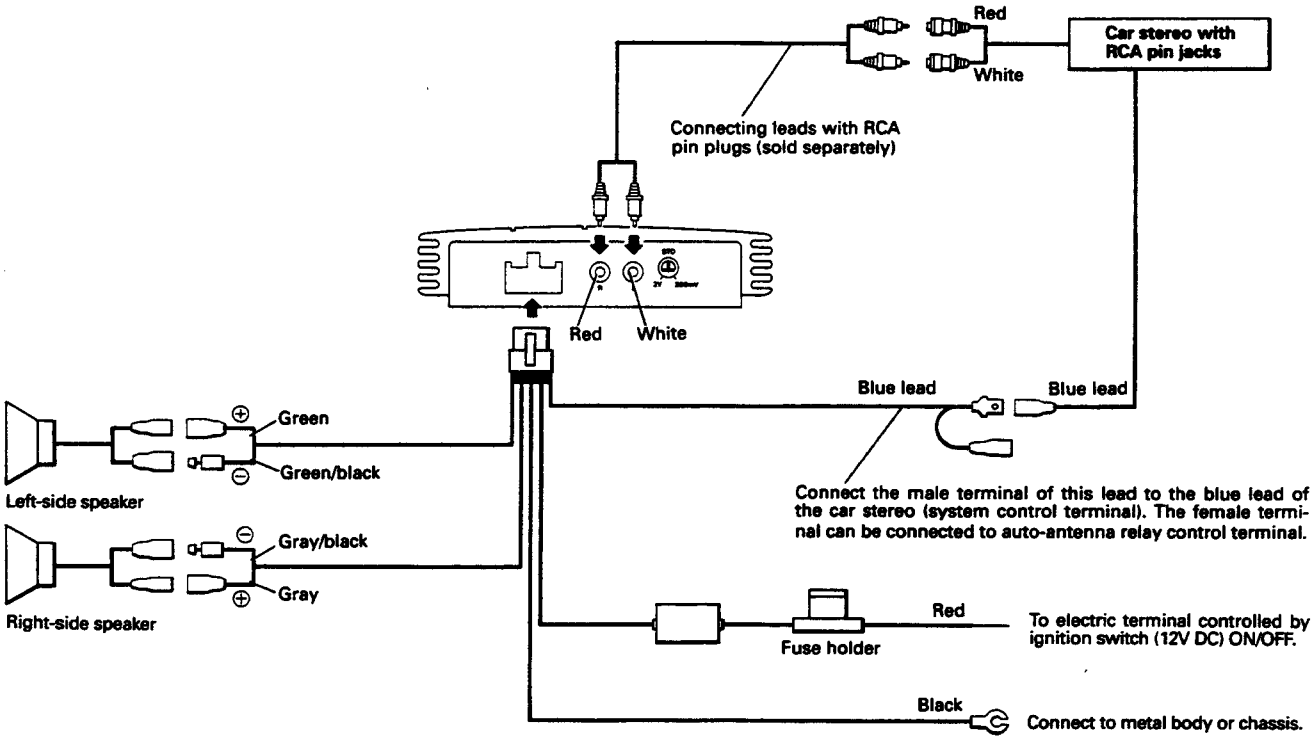

Red
White
Car stereo with RCA pin jacks
Connecting leads with RCA pin plugs (sold separately)
Red
White
Blue lead
Blue lead
Green
Green/black
Left-side speaker
Gray/black
Gray
Right-side speaker
Connect the male terminal of this lead to the blue lead of the car stereo (system control terminal). The female terminal can be connected to auto-antenna relay control terminal.
Red
Fuse holder
To electric terminal controlled by ignition switch (12V DC) ON/OFF.
Black
Connect to metal body or chassis.

Fig. 1

2. CONNECTING THE UNITS (EW MODEL)

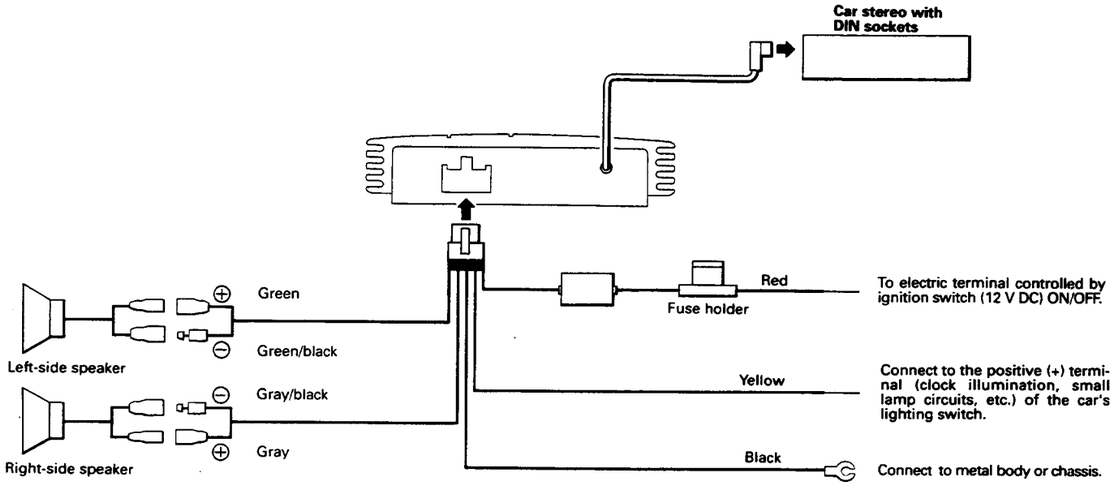


Fig. 2

3. INPUT LEVEL ADJUSTMENT (UC, ES MODEL)

If the sound is too low even when the volume of the car stereo used along with this power amplifier is turned up, turn the input level control on the back of the power amplifier clockwise. If the sound distorts when the volume is turned up, turn the input level control counterclockwise.

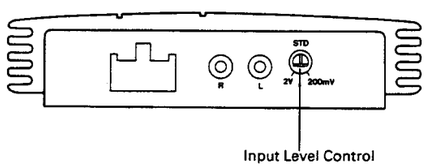


Fig. 3

4. DISASSEMBLY

- Remove the Heat Sink
  1. Remove the four screws A and four screws B.
  2. Remove the heat sink.

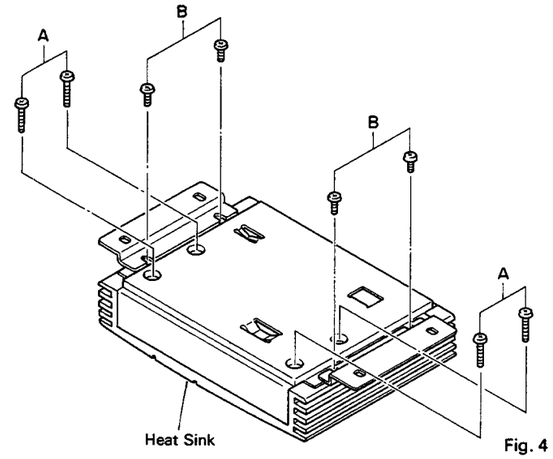
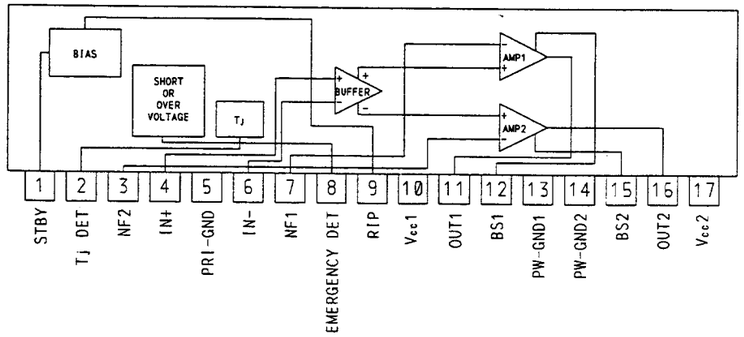


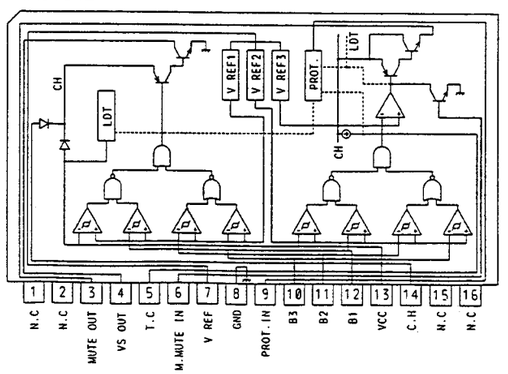
Fig. 4

- **ICs**

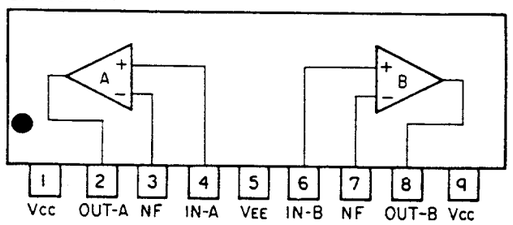
TA8225L



TA8194Z

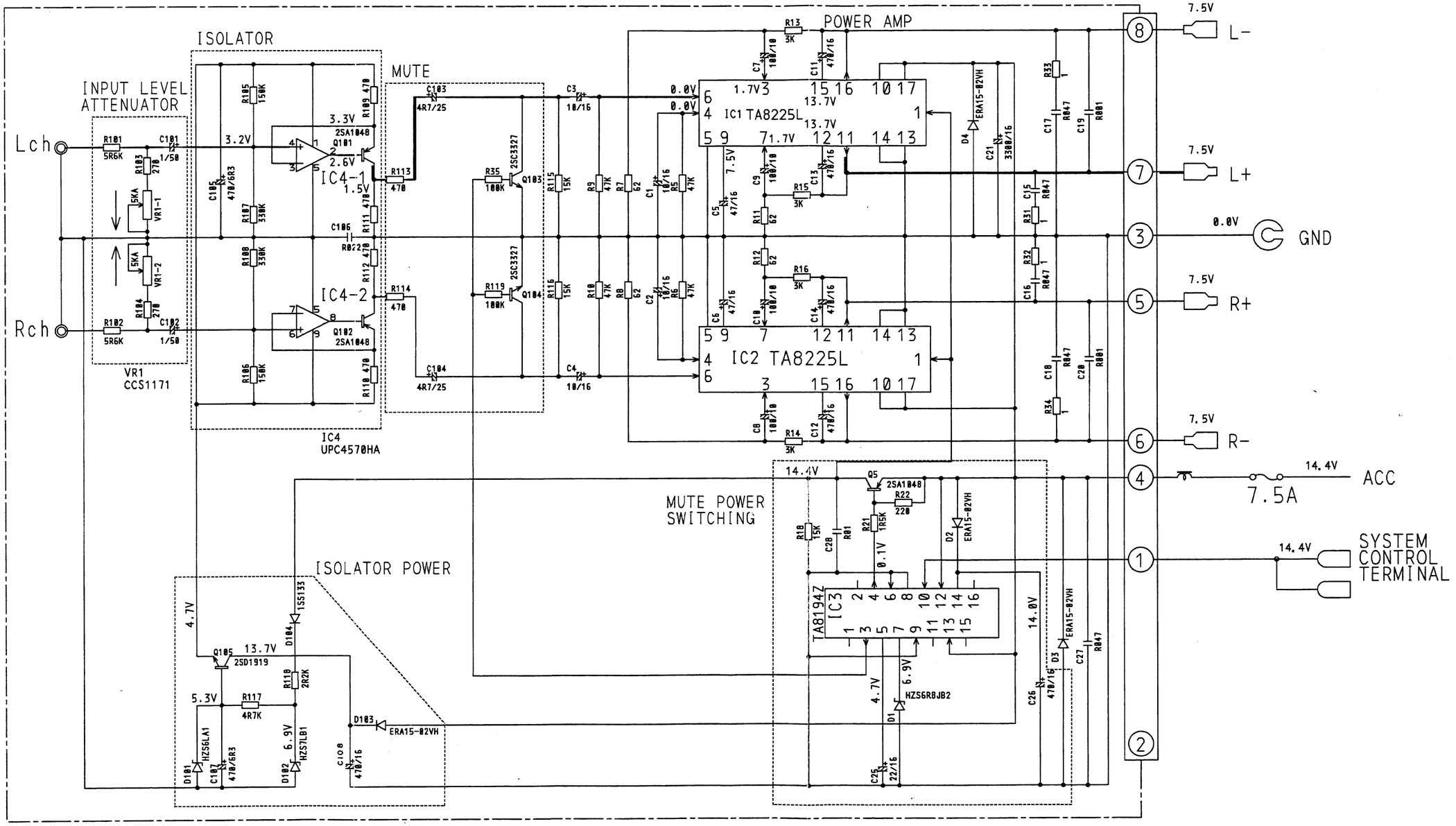


UPC4570HA



5. SCHEMATIC CIRCUIT DIAGRAM (UC, ES MODEL)

AMP UNIT



NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 5

6. CONNECTION DIAGRAM (UC, ES MODEL)

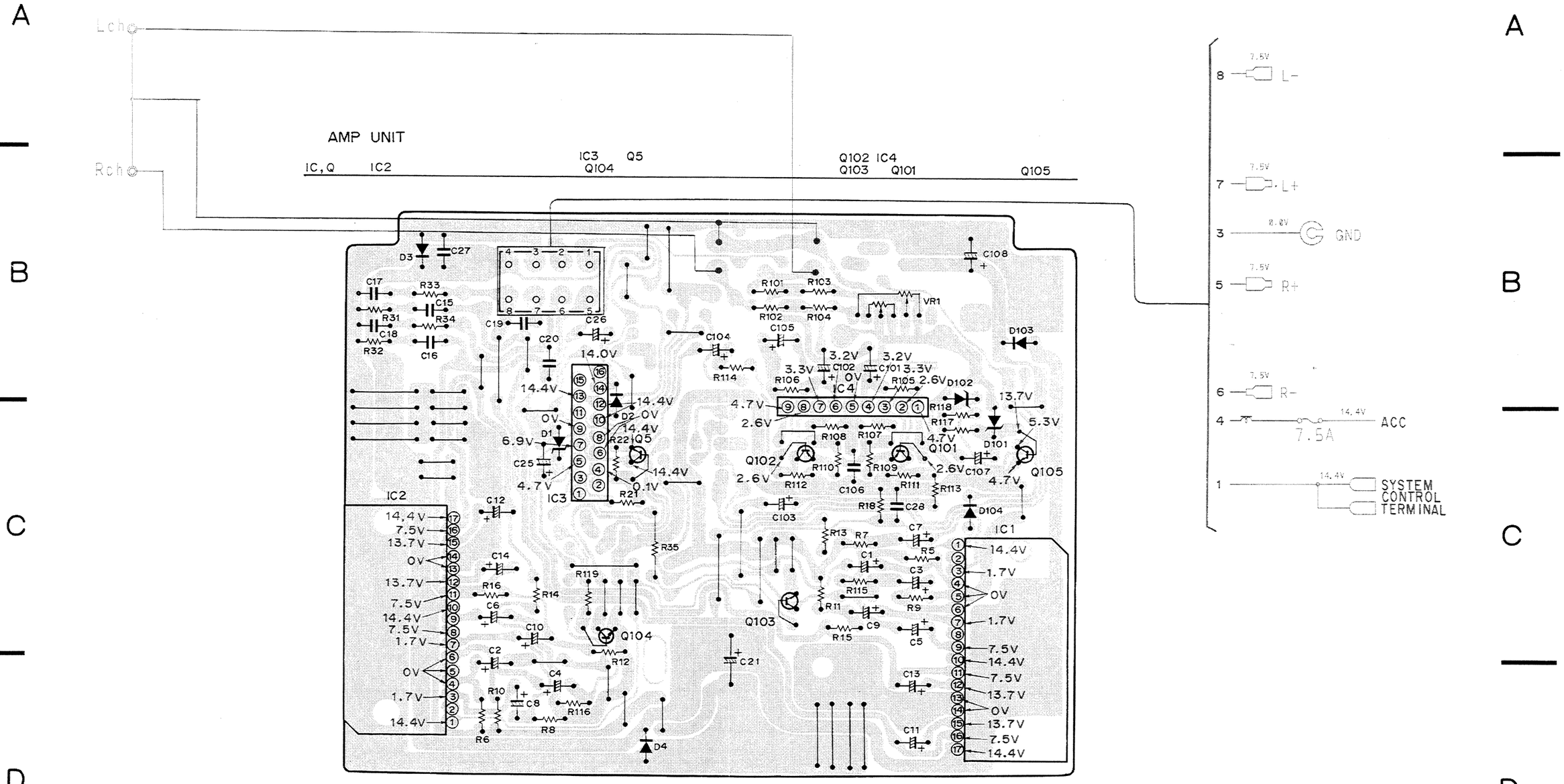
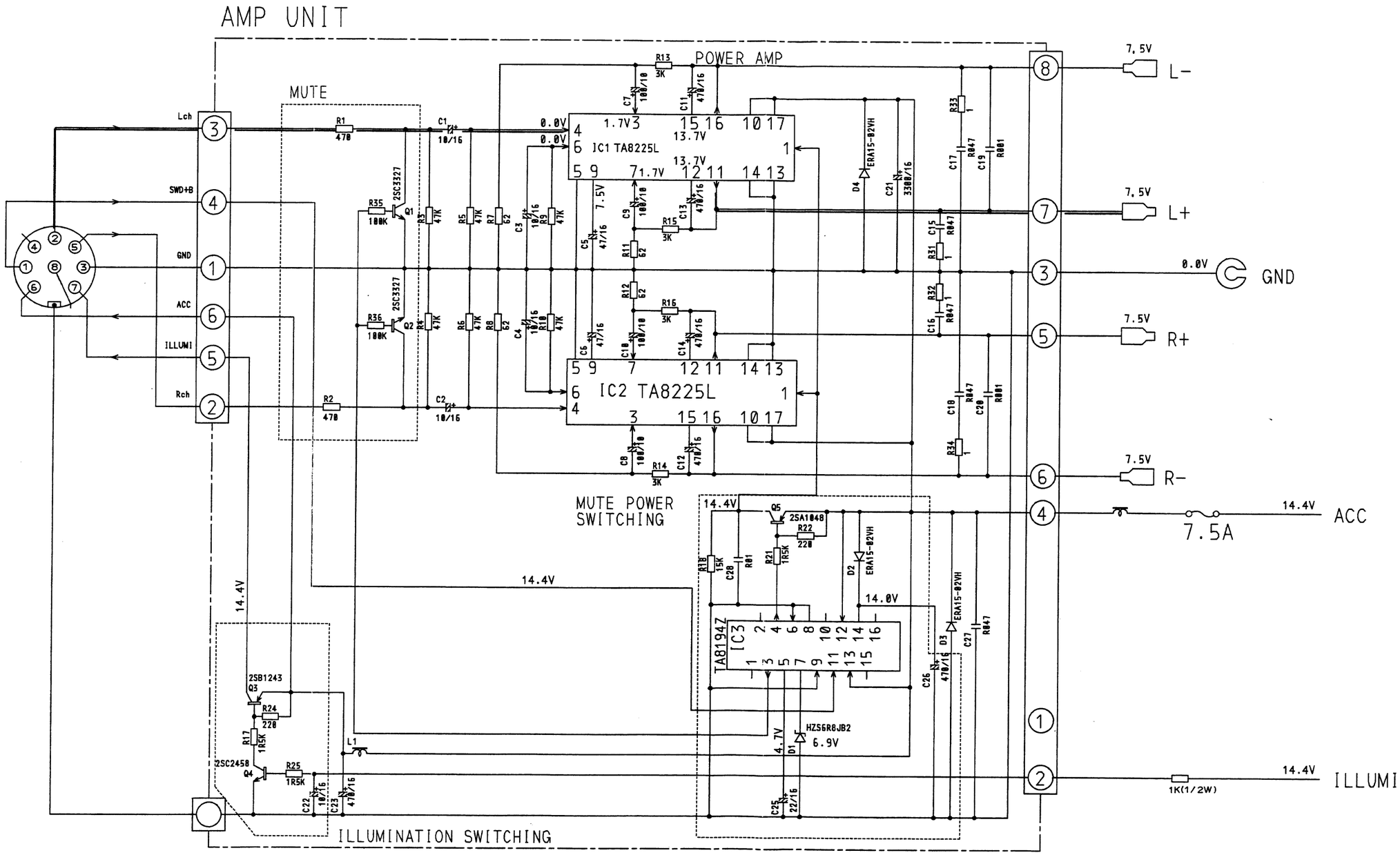


Fig. 6

7. SCHEMATIC CIRCUIT DIAGRAM (EW MODEL)



NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 7

8. CONNECTION DIAGRAM (EW MODEL)

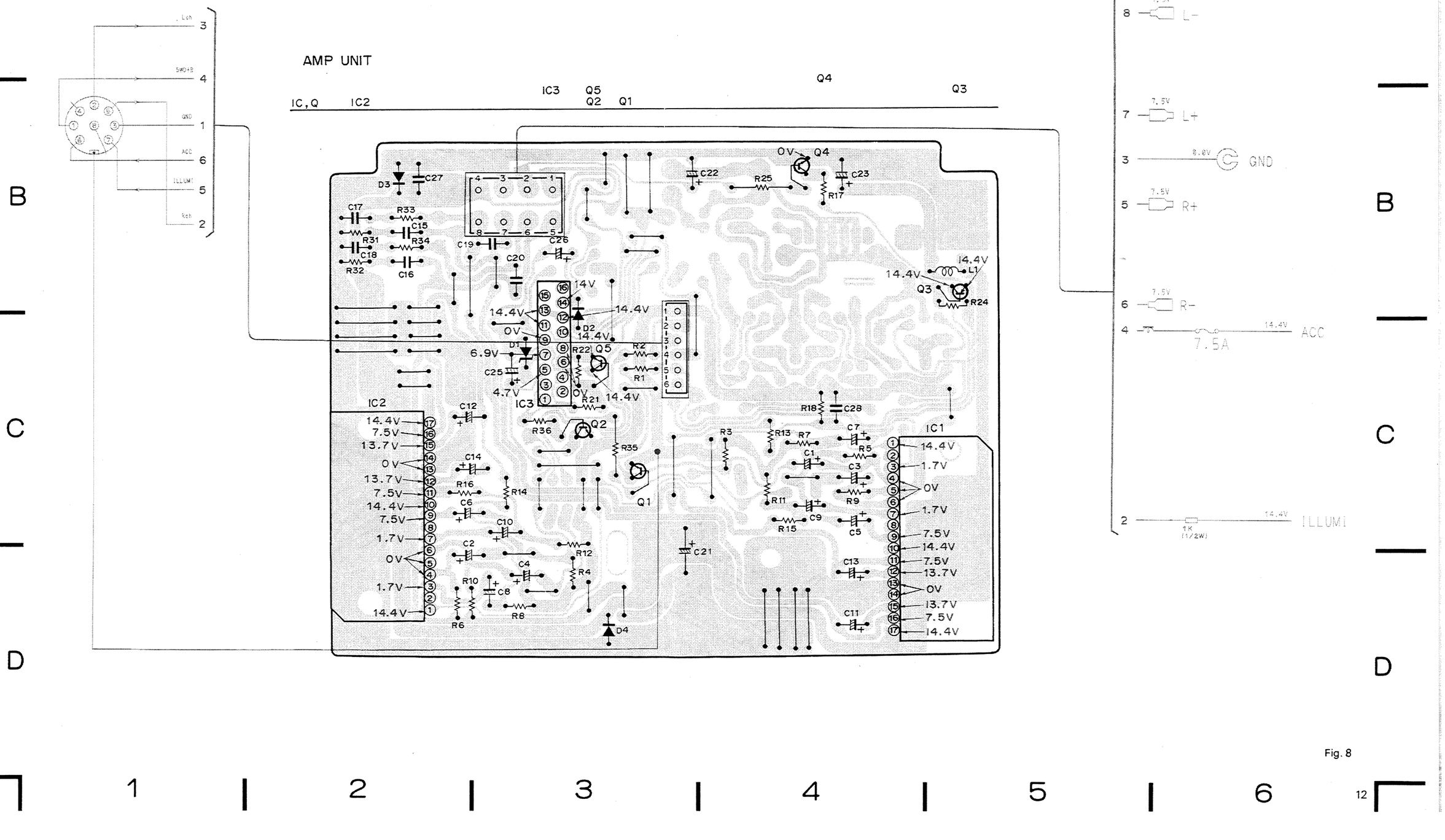


Fig. 8

9. EXPLODED VIEW

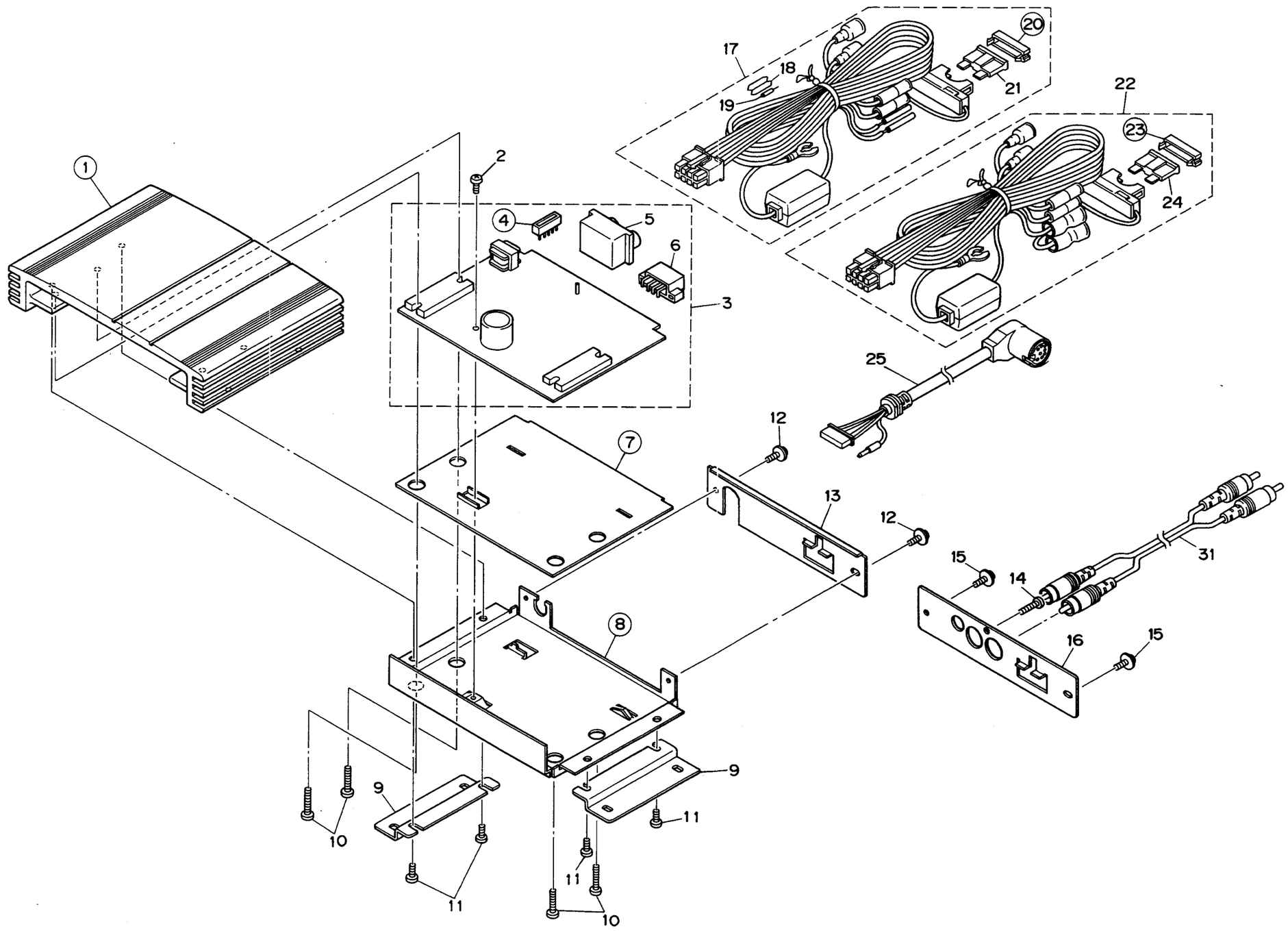


Fig. 9

● Parts List (GM-600/UC)

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Part No.	No.	Description	Part No.
	1	Heat Sink		11	Screw	BMZ30P050FZK
	2	Screw	BMZ30P040FMC	12, 13	·····	
◉	3	Amp Unit	CWH1099	14	Screw	BPZ30P080FZK
	4	·····		15	Screw	PMS30P040FZK
	5	Jack	CKB1005	16	Panel	CNB1388
	6	Connector	CKM1079	17—21	·····	
	7	Insulator		22	Cord Assy	CDE2998
	8	Chassis		23	Cap	
	9	Bracket	CNC3420	24	Fuse	CEK1135
	10	Screw (M3×12)	CBA1162	25—31	·····	

NSP: Non spare part

			GM-600/UC	GM-600/EW	GM-620/ES
Mark	No.	Description	Part No.	Part No.	Part No.
	1	Heat Sink	NSP	NSP	NSP
◉	3	Amp Unit	CWH1099	CWH1098	CWH1099
	4	Plug	·····	NSP	·····
	5	Jack	CKB1005	·····	CKB1005
	8	Chassis	NSP	NSP	NSP
	12	Screw	·····	PMS30P040FZK	·····
	13	Panel	·····	CNB1387	·····
	14	Screw	BPZ30P080FZK	·····	BPZ30P080FZK
	15	Screw	PMS30P040FZK	·····	PMS30P040FZK
	16	Panel	CNB1388	·····	CNB1388
	17	Cord Assy	·····	CDE2997	·····
	18	Cap	·····	CNS1472	·····
	19	Resistor	·····	RS1/2P102JL	·····
	20	Cap	·····	NSP	·····
	21	Fuse	·····	CEK1135	·····
	22	Cord Assy	CDE2998	·····	CDE2998
	23	Cap	NSP	·····	NSP
	24	Fuse	CEK1135	·····	CEK1135
	25	Cord Assy	·····	CDE3254	·····
	31	Cord Assy	·····	·····	CDE3201

10. PACKING METHOD

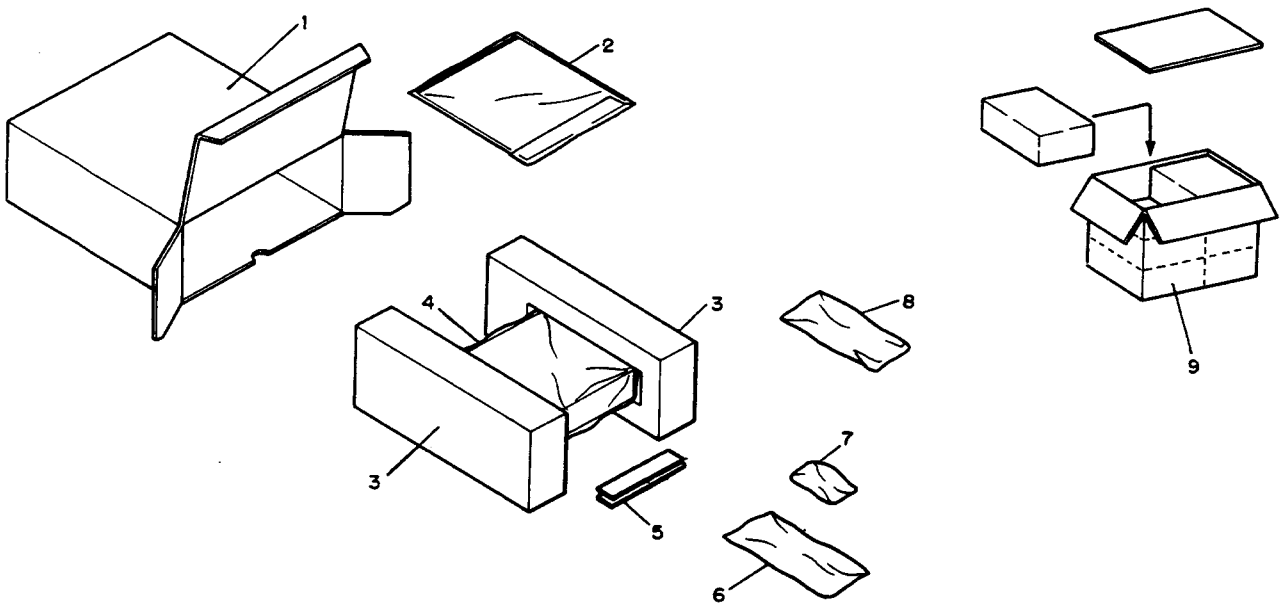


Fig. 10

● **Parts List**

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton (EW)	CHG1881	6	Cord Assy (EW)	CDE2997
	Carton (UC)	CHG1882		Cord Assy (UC, ES)	CDE2998
	Carton (ES)	CHG1883	7	Accessory Assy	CEA1603
2-1	Owner's Manual (EW)	CRD1414	7-1	Screw (× 4)	BYC40P120FZK
	Owner's Manual (UC)	CRD1415	7-2	Fastener (× 2)	CNM-667
	Owner's Manual (ES)	CRD1416			
			8	Cord Assy (ES)	CDE3201
2-2	Card (EW)		9	Contain Box (UC)	CHL1882
	Card (UC)				
3	Styrofoam	CHP1369			
4	Polyethylene Bag	E36-618			
5	Bracket	CNC3420			

* Owner's Manual

Part No.	Model	Language
CRD1414	GM-600/EW	English, French, German, Spanish, Swedish, Norwegian, Dutch, Italian, Finnish
CRD1415	GM-600/UC	English, French
CRD1416	GM-620/ES	English, French, Spanish, Arabic, German

11. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/8S □□□J, RS1/10S □□□J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : Amp Unit (GM-600/UC, GM-620/ES)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	1 2		TA8225L
IC	3		TA8194Z
IC	4		UPC4570HA
Q	5		2SA1048
Q	101 102		2SA1048
Q	103 104		2SC3327
Q	105		2SD1919
D	1		HZS6R8JB2
D	2 3 4		ERA15-02VH
D	101		HZS6LA1
D	102		HZS7LB1
D	103		ERA15-02VH
D	104		1SS133
VR	1	5kΩ(A)	CCS1171

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	5 6 9 10		RD1/4PS473JL
R	7 8 11 12		RD1/4PS620JL
R	13 14 15 16		RD1/4PS302JL
R	18		RD1/4PS153JL
R	21		RD1/4PS152JL
R	22		RD1/4PS221JL
R	31 32 33 34		RD1/4PS010JL
R	35		RD1/4PM104J
R	101 102		RD1/4PS562JL
R	103 104		RD1/4PS271JL
R	105 106		RD1/4PS154JL
R	107 108		RD1/4PS334JL
R	109 110 111 112 113 114		RD1/4PS471JL
R	115 116		RD1/4PS153JL
R	117		RD1/4PS472JL
R	118		RD1/4PS222JL
R	119		RD1/4PS104JL

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	1 2 3 4		CEA100M16L2
C	5 6		CEA470M16L2
C	7 8 9 10		CEA101M10L2
C	11 12 13 14	470μF/16V	CCH-114
C	15 16 17 18		CQMA473K50
C	19 20		CQMA102K50
C	21	3300μF/16V	CCH1037
C	25		CEA220M16L2
C	26 108	470μF/16V	CCH-114
C	27		CQMA473K50
C	28		CKPYY103M16L
C	101 102		CEA010M50L2
C	103 104		CEA4R7M25L2
C	105 107		CEA471M6R3L2
C	106		CQMA223K50

Unit Number :
Unit Name : Amp Unit (GM-600/EW)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	1 2		TA8225L
IC	3		TA8194Z
Q	1 2		2SC3327
Q	3		2SB1243
Q	4		2SC2458
Q	5		2SA1048
D	1		HZS6R8JB2
D	2 3 4		ERA15-02VH
L	1	Choke Coil	CTH1047

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	1 2		RD1/4PS471JL
R	3 4 5 6 9 10		RD1/4PS473JL
R	7 8 11 12		RD1/4PS620JL
R	13 14 15 16		RD1/4PS302JL
R	17 21		RD1/4PS152JL
R	18		RD1/4PS153JL
R	22 24		RD1/4PS221JL
R	25		RD1/4PM152J
R	31 32 33 34		RD1/4PS010JL
R	35		RD1/4PM104J
R	36		RD1/4PS104JL

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	1 2 3 4 22		CEA100M16L2
C	5 6		CEA470M16L2
C	7 8 9 10		CEA101M10L2
C	11 12 13 14	470μF/16V	CCH-114
C	15 16 17 18		CQMA473K50
C	19 20		CQMA102K50
C	21	3300μF/16V	CCH1037
C	23 26	470μF/16V	CCH-114
C	25		CEA220M16L2
C	27		CQMA473K50
C	28		CKPYY103M16L